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# Research Note

NORTHERN ROCKY MOUNTAIN
FOREST AND RANGE EXPERIMENT STATION

Missoula, Montana

Research Note No. 26 Missoula, Montana August 1942

## EARLIER MARKETING OF RANGE COWS - IS THIS A DESIRABLE RANGE MANAGEMENT PRACTICE?

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On most cattle ranches, it is the regular practice to cull the breeding herd and to market the older and less desirable cows each year. The usual practice on Northern Great Plains ranges has been to gather and market these culled animals in October or late September. Cows that have failed to raise a calf one or more seasons usually make up a substantial part of the breeding animals that are culled for market each fall.

If these cows were marketed earlier in the season, it is obvious that more range forage would be available for the remainder of the herd. Any such saving of range forage will, in turn, tend to shorten the winter feeding period and reduce the expense and risk of wintering the remainder of the herd. It thus becomes a matter of importance in managing the range and other feed resources to market the culled cows as early as possible without corresponding sacrifice in weight or in price.

The trend in weight of dry cows and of cows with calves on experimental cattle pastures on short-grass range near Miles City, Montana, provides some basis for deciding on the relative merits of fall versus late summer marketing of range cows. This cooperative experiment 1/ was set up at the U.S. Range Livestock Experiment Station to determine over a period of years the relative merits of heavy, moderate, and light degrees of range stocking by 20 breeding cows at each degree of stocking and of certain other range management practices. Certain results of this experiment have already been reported, but weight trends of the cows on the various summer pastures provide additional information of interest on the question of which is the preferable marketing time.

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1/ Conducted by the Forest Service in cooperation with the Montana State Agricultural Experiment Station and the Bureau of Animal Industry at the U.S. Range Livestock Experiment Station near Miles City, Montana.

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These high quality Hereford cows and their calves were grazed during the summers from 1933 to 1941 on a series of adjacent short-grass range pastures. The first group of 60 cows were started as 3-year-olds with their first calves in 1933 and continued during four seasons. The second group of 60 cows grazed on the same pastures as 3-year-olds with their first calves in 1938 and summer weight data through 1941 are now available. The eight seasons embrace the severe drought years of 1934 and 1936 and six more normal seasons. These cows were turned into the summer pastures on or about May 15 and remained there until about mid-November, when they were moved back to winter pastures. During these summer periods, the cows and their calves were weighed individually at 28-day intervals. The number of dry cows out of 60 varied from 4 in 1939 to 18 in 1935.

Dry cows, as well as cows with suckling calves, gained rapidly from mid-May until early July except during two severe drought years. During July and August, the cows with suckling calves usually lost some weight even though they had an ample supply of nutritious forage to last until November. After early September, the trend was definitely downward for these "wet" cows. During 1934 and 1936, which were severe drought years, the average peak weight for wet cows was recorded on June 12 from which point weight dropped rapidly as the forage became scarce.

Average weight trends of dry cows followed a somewhat similar course but trended upwards more sharply through May and June. During six relatively favorable seasons, average gains for dry cows of 115 to 182 pounds for the first 56 days or at the rate of 2.0 to 3.2 pounds per day were made during this spring period.

Weight gains for dry cows during the second 56-day period - from early July to early September - were at a much lower rate, ranging from 0.1 to 1.3 pounds per day or an average for all dry cows for six normal years of 0.54 pound per day.

Forage was relatively abundant in all pastures during this second 56-day period. Reduced gains were therefore not due to scarcity of forage but rather to flies, hot weather, and perhaps mostly to a change in quality of the range forage from the green and succulent stage to the cured stage. Succulent green grass is rich in proteins, vitamins, and minerals, is easily digested by livestock, and such feed is considered by feeding authorities as a watered concentrate because it is so healthful and nutritious. It is a well established fact that such green forage produces livestock gains at a more rapid rate than when the forage has reached the mature stage, such as usually occurs during this second period in July and August.

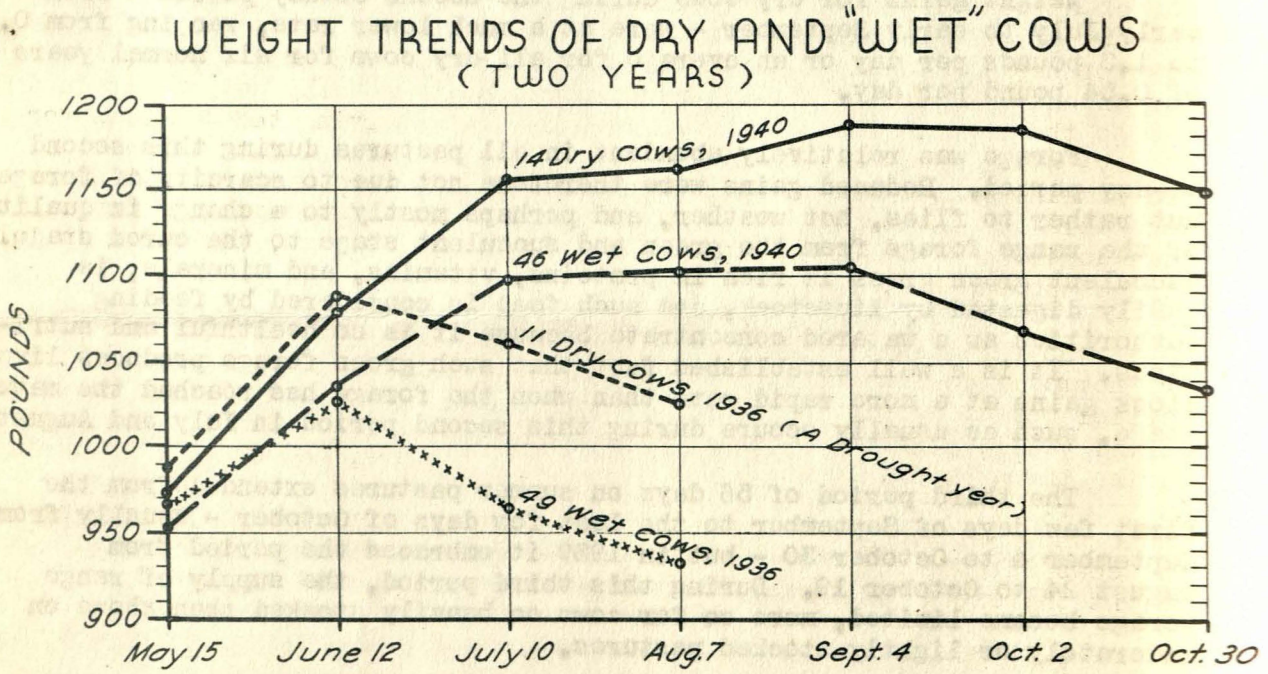
The third period of 56 days on summer pastures extended from the first few days of September to the last few days of October - usually from September 4 to October 30 - but in 1939 it embraced the period from August 24 to October 19. During this third period, the supply of range forage became limited, more so for cows on heavily stocked than those on moderately or lightly stocked pastures.

Following is the record of average gains and losses for dry cows during this third 56-day period for six relatively favorable forage years. The heavily, moderately, and lightly grazed pastures were represented by an aggregate of 24, 17, and 17 dry cows, respectively, during these six years.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1933 - | 6 | dry cows | gained | an average of | 10 | pounds | |
| 1935 - | 18 | " " | lost | " " " | 45 | " | |
| 1938 - | 10 | " " | lost | " " " | 28 | " | |
| 1939 - | 4 | " " | gained | " " " | 14 | " | |
| 1940 - | 14 | " " | lost | " " " | 39 | " | |
| 1941 - | 6 | " " | gained | " " " | 16 | " | |

Average weight losses occurred during three seasons but slight gains also occurred during three seasons. Losses averaged more than double the gains to give a combined downward weight trend during this early fall period. This downward trend was more pronounced during October than September. During this period dry cows were merely "free boarders" even though slight gains were made during October of one year but not enough to pay for the extra time, cost, and risks involved. Weight losses averaged still heavier during early November. This brings into sharp focus the question as to whether dry cows should be sold in late August or early September rather than two months later when on the average they weigh substantially less.

Weight trends for the cows (5-year-olds) in the 1940 season are quite similar to trends during the five other relatively normal years. The following graph gives the weight trends averaged for 14 dry cows for that season and for 46 cows with calves in these experimental pastures. The




weight trends for 11 dry and for 49 (6-year-old) cows with calves are shown

on this same graph for the early part of 1936. Because of the drought in 1936, feeding of hay to supplement the range forage became necessary in July so that weights after August 7 are not a reflection of trends on range forage.

Relative prices and shrinkage in August or in early September sales, as well as the weight trend and supply of cheap range forage, of course, deserve some consideration in reaching a conclusion as to early versus late marketing of dry cows. Bulletin No. 394 of the Montana Agricultural Experiment Station reports that average prices for beef on Montana ranches are somewhat lower in September, October, and November than in July or August. It is evident that the late October price would have to be substantially higher to compensate for the average loss of 39 pounds on dry cows between September 4 and October 30, 1940, or 45 pounds in 1935.

Specific data are not available from this experiment to show relative weight shrinkage of dry cows shipped in early September as compared to shrinkage two months later. It is known, however, that such short-grass forage usually becomes dormant in July or early August and continues in this condition for several weeks. Green growth occasionally occurs in the fall when September rains provide sufficient moisture, as was the case in 1940 and 1941. It is reasonable to believe that shrinkage of range cattle shipped in October from green, washy grass may often be equal to or greater than the shrinkage when shipped in late August or early September from mature forage.

Regardless of relative shrinkage and even of some slight weight gains that are sometimes made in September, the amount of range forage used by dry cows during this 60-day period is often badly needed and may be used to better advantage for wintering the breeding herd that is to be maintained. A delay of 60 days or more in marketing the culled cows may mean substituting for cheap range forage a corresponding amount of hay or supplemental feed, thereby greatly increasing the cost of wintering the breeding herd. The cost of hay is usually 5 to 10 times greater than the cost of range forage for an equal period of time. Furthermore, heavy grazing may result in damage to the range. The extra feed required for carrying the dry cows for 60 days after early September must be balanced against wintering cost of the remaining herd and the risks involved in a severe winter. All deserve consideration in deciding on an early or late date for marketing dry range cows during a favorable season. During a drought season, marketing in July may be unescapable.

So far this discussion has been mainly about dry cows. Some wet cows are normally culled and included in sales each fall. To what extent is earlier marketing of cows with suckling calves desirable? Of six relatively normal years, cows with calves reached maximum average weights in August during three years, in early September in two years, and on July 10 during one year. Trends after early September each year were quite similar to those shown on the graph for wet cows for 1940. During the two drought years, the cows with calves averaged heaviest on June 12 and declined rapidly in weight thereafter until hay feeding became necessary in July.

Even though weight losses for those wet cows were more severe after late summer than for dry cows, it is not always advisable to wean the calf and sell the cow in early September. Early marketing of such wet cows may well be justified if the calf is six months old or more and ready to be weaned. Also, young suckling calves may often be marketed separately as

vealers at a very favorable price. Early marketing of cows having calves classed as vealers, as well as those having well developed calves that are old enough to be weaned, may be well justified. A threatened shortage of range forage may justify the early marketing of a considerable portion of the less desirable wet cows.

Weight trends for yearling range steers in another experiment, conducted during the spring and summer of 1939 to 1942, indicate that this class of cattle normally gain at the rate of 2 to 2½ pounds per day during May and June when the grass is abundant, green, and succulent, but at less than half this rate in late July and August when they had an ample quantity of mature but rather dry grass. Unfortunately, weight data for these steers through fall months are not available to show whether their average fall weight trend was closely similar to dry cows. However, when the supply of range forage is so limited as to reduce the rate of gains on mature forage during late summer to a very low figure, it may sometimes be advisable to market range steers as well as cows by early September. Such a practice may be especially desirable during a dry year or when grasshoppers use a large percentage of the forage. Any material change to an earlier marketing of steers should be made gradually and only after full consideration of the effect on feeding operations in the "Corn Belt" and elsewhere.

Weight losses usually exceeded gains for both dry cows and cows with calves after late August or early September even during favorable seasons on typical short-grass ranges near Miles City. In view of this rather well defined trend, coupled with a downward trend in ranch beef prices on the average from July through the fall months, it is evident that dry cows and some wet cows may often be marketed to better advantage in late August or early September rather than late in October. If shrinkage proves to be less or even equal when cattle are shipped at these early rather than later dates, the advantages of heavier weight and higher prices at earlier dates will be increased.

It should not be overlooked, however, that the advantages of greater immediate returns may often be of minor importance as compared to the saving in the cost of wintering the breeding herd that may be made when those sold are marketed early. This is a very important item during normal years, but during drought years very early marketing is of supreme importance because it may determine whether the breeding herd may be carried through to another year without prohibitive costs or severe losses.

Early marketing of cows allows for a more economical use of expensive hay or other stored feed on the one hand and a more efficient use of cheap range forage that will on the other tend to keep down production costs and risks of losses in the breeding herd. Where early shipments mean a saving in forage or in greater net weight marketed, it will be of importance in aiding increased war-time production. This aspect is of especial importance at this time when cattle numbers are at or near the maximum and feed resources are at a premium, which calls for most efficient use in producing maximum beef supplies.

Secretary Wickard recently commented on the scarcity of certain cuts of meat at some markets. He pointed out that this was partly due to war-time conditions and partly to the usual slump in marketing of livestock in late summer months. It thus seems probable that earlier marketing of range cows may also help to relieve this shortage and at the same time aid in avoiding market congestion at later dates.

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Most ranches put market stock on hay meadows in fall before shipping to put on extra finish.!